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CHALLENGE TB



**Challenge TB – Mozambique
Year 2
Annual Report
October 1, 2015 – September 30, 2016
October 30, 2016**

Cover photo: Group Picture taken during CTB Annual Partners Meeting held in Beira Cidade, Sofala Province. Photo Credit Dr. Francisco Luis.

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Table of Contents

1. Executive Summary.....	6
2. Introduction	8
3. Country Achievements by Objective/Sub-Objective	10
4. Challenge TB Support to Global Fund Implementation.....	36
5. Challenge TB Success Story.....	37
6. Operations Research.....	39
7. Key Challenges during Implementation and Actions to Overcome Them	40
8. Lessons Learnt/ Next Steps	41
Annex I: Year 2 Results on Mandatory Indicators as well as National Data on the Number of pre-/XDR-TB Cases Started on Bedaquiline or Delamanid	43
Annex II: Status of EMMP activities	52

List of Tables

No table of figures entries found.

Table 1: CTB Technical Areas by Objective.....	8
Table 2: Sub-objective 1. Enabling environment.....	11
Table 3: EQA Results in APA 2.....	14
Table 4: Result of Assessments for peripheral lab expansion.....	14
Table 5: Sub-objective 2. Comprehensive, high quality diagnostics.....	16
Table 6: Sub-objective 3. Patient-centered care and treatment.....	20
Table 7: Sub-objective 4. Targeted screening for active TB.....	24
Table 8: Sub-objective 5. Infection control.....	26
Table 9: Sub-objective 6. Management of latent TB infection.....	27
Table 10: Sub-objective 7. Political commitment and leadership.....	28
Table 11: Sub-objective 8. Comprehensive partnerships and informed community involvement.....	29
Table 12: Sub-objective 9. Drug and commodity management systems.....	30
Table 12: Sub-objective 9. Drug and commodity management systems.....	31
Table 14: Sub-objective 11. Human resource development.....	33
Table 15: Current Global Fund TB Grants.....	34

List of Figures

Figure 1: CTB provincial and district coverage.....	9
Figure 2: TB support group members in Tete City (Credit: Dr. Francisco Luis, PTO Tete).....	10
Figure 3: IEC flyers Reproduced by CTB and used by adherence groups and CHW during education sessions.....	11
Figure 4: Installed water tanks with a total capacity of 10,000 liters in Beira RRL (Photo credit: Daniel Bomba 2016).....	13
Figure 5: CTB motorbike drivers trained in Zambezia Province September 2016 (Photo credit: Nureisha Cadir) and Training Manual for Sample Transportation.....	15
Figure 6: CB DOTS Community Referral of TB Presumptive Cases down to TB Diagnoses.....	18
Figure 7: FHI360 National Director Dr. Dario, Dr. Arminda (CHASS), Dr. Zaina (CTB Chief of Party), Dr. Jeroen (KNCV) and Dr. Cesar (DFB) having a discussion during CTB Annual Meeting.....	20

List of Abbreviations and Acronyms

ADPP	Ajuda de Desenvolvimento de Povo para Povo
AMOFEDA	Associação Moçambicana para Desenvolvimento da Famílias
ASM	American Society for Microbiology
BDQ	Bedaquiline
BSC	Bio Safety Cabinet
CB-DOTS	Community Based Direct Observed Treatment Services
CCR	Children at Risk
CHW	Community Healthcare Worker
CTB	Challenge TB
DFB	Damien Foundation Belgium
DLM	Delamanid
DOT	Directly Observed Treatment
DPS	Provincial Directorate of Health
DST	Drug Susceptibility Testing
ER+R	Electronic Reporting and Recording
EQA	External Quality Assessment
FAST	Finding Actively TB and MDR-TB cases, Separating Safely and Treating effectively
FGH	Friends in Global Health
FHI	Family Health International
GF	Global Fund
GLI	Global Laboratory Initiative
HAI	Health Alliance International
HF	Health Facility
HIV	Human Immunodeficiency Virus
IC	Infection Control
IEC	Information, Education and Communication
IPAC	National Portuguese Institute for Accreditation
KNCV	KNCV Tuberculosis Foundation
LTTA	Long Term Technical Assistance
LZ	Linezolid
MCHN	Maternal Child Health Nurse
MDR-TB	Multi Drug Resistant TB
M&E	Monitoring and Evaluation
MOH	Ministry of Health
MSF	<u>Médecins Sans Frontières</u>
ND&R	New Drugs and Regiments
NICD	National Institute of Communicable Disease
NIH	National Institute of Health
NTP	National Tuberculosis Control Program
NRL	National Reference Laboratory
PTO	Provincial Technical officer
PCA	Patient Centered Approach
RRL	Regional Reference Laboratory
SERNAP	National Prisons Service
SMS	Short Message Service
SNL	Supra National Laboratory
STTA	Short Term Technical Assistance
STS	Specimen Transportation System
TA	Technical Assistance
TB	Tuberculosis
TO	Technical Officer
TOT	Training of Trainers
TWG	Technical Working Group
USAID	United States Agency for International Development
XDR-TB	Extensively Drug Resistant TB
WHO	World Health Organization

1. Executive Summary

Challenge TB (CTB) is a five year global United States Agency for International Development (USAID)-funded project implemented by the CTB partnership with KNCV Tuberculosis Foundation (KNCV) as the prime. The project builds and expands upon previous USAID tuberculosis (TB) prevention and treatment efforts. As the lead partner for the CTB project in Mozambique, FHI 360 provides technical leadership to the project, ensuring coordination, management and monitoring of the project activities at the country level. FHI 360 maintains a close working relationship with the National Tuberculosis Program (NTP), USAID, other relevant departments of the Mozambique Ministry of Health (MOH), KNCV, the only other CTB coalition partner, and other collaborating partners, including civil society organizations, to ensure project activities are implemented in line with the NTP national strategic plan 2014–2018, and in accordance with established standards.

The CTB team accelerated project activities in year two after a short year one implementation period. The team invested efforts into critical activities, such as the start-up of Community-based DOTS (CB-DOTS), which could not be implemented in year one. Due to this short period of implementation and consequently low year 1 expenditure, the project carried-over approximately one million dollars into year two. The year two work plan was approved in early October 2015, allowing the project to focus on activities to support the National Tuberculosis Control Program (NTP) at central and provincial level by training health professionals on multidrug resistant tuberculosis (MDR-TB), pediatric TB, laboratory interventions at the central, provincial, district and health facilities levels, improving the quality of health systems for TB prevention and care, and strengthening the national reference laboratory (NRL) and NTP monitoring and evaluation (M&E) systems.

Key achievements of year 2 included:

- Revitalization of TB Activities in the Prisons

CTB led the TB in Prisons Working Group, which includes National Prison Services (SERNAP), NTP and other partners working in correctional settings. The group with CTB leadership developed prison information, education and communication (IEC) flyers for the first time in Mozambique, which have been approved and are now in use across the country. CTB trained prison guards and inmates (cell leaders) in TB prevention, including identification of presumptive TB cases and the referral system using the flyers. 161 (M 142/F 19) presumptive cases were identified out of 250 prisoners screened. Of the presumptive cases referred to a nearby health facility (HF), 30 (M 27/F 3) were diagnosed with TB. The total prison population from CTB target prisons is 2,930.

- Laboratory Strengthening

As challenges within the laboratory system have been hindering overall program performance, the Project supported a much needed first national meeting of all three reference laboratories. The group discussed the challenges and constraints facing the two Regional Reference Laboratories (RRL) in Beira and Nampula, which resulted in critical interventions including staff changes in Beira and the decision to expand second line Drug Sensitivity Testing (DST)/Line Probe Assay (LPA) to Nampula. In addition, to improve functioning and overall results of the RRLs, CTB-supported Long Term Technical Assistance (LTTA) to Sofala and Nampula RRL, along with supervisory lab visits (2 to Nampula and 1 to Beira) to provide on-the-job training and mentoring of RRL technical staff. This resulted in an immediate significant increase in number of culture samples processed from 8 to 30 per day. More long term work began on Nampula and Beira lab infrastructure improvement, a smear microscopy and GeneXpert manual development and national External Quality Assurance (EQA) guideline development. Finally, CTB initiated the pilot of an innovative specimen transport system in 6 districts of 2 provinces.

- CB DOTS

The team strengthened CB-DOTS implementation and provided technical assistance to NTP/MOH provincial, district and HF staff in TB prevention and care activities through training and supportive supervision visits, including on-site mentoring and on-the-job training. CB-DOTS sub-awards were approved from quarter 2, and subgrantees managed to increase presumptive TB cases referred by Community Health Workers (CHW) and peripheral health nurses to health facilities (HF) for TB screening (18,204 referred: M 9,105, F 9,099) after training. 17% of the successful referrals (2,825/16,538) were diagnosed with TB (all forms), with 54% (1,530/2,825) having bacteriologically confirmed TB.

- Pediatric TB

Pediatric TB activities at provincial and district level resulted in an increase in Pediatric TB case notifications within CTB target provinces from 10% (1390/13,355) between January and June 2015 to 12% (1675/13911) in the same period 2016, among children 0 to 14 years old.

- TB Prevalence Survey

Through KNCV STTA support, CTB contributed to preparations for the upcoming NTP Prevalence Survey by providing technical assistance in the study protocol development and budget. The pilot of the prevalence survey is expected to take place in March 2017.

- New Drugs and Regimens (ND&R)

CTB provided critical TA to the ND&R National Core Team and the Treatment Review Technical Working Group, which received approval from the MOH, quantified needs for new drugs, placed the order and prepared the country for the introduction of Bedaquiline, Delamanid and a shorter MDR treatment regimen.

However, the implementation of many planned central level activities was not successful due to competing priorities at the NTP. Of the uncompleted planned activities in year two, 62% (32/52) were centrally oriented or required NTP central level staff participation. In contrast, all provincial planned activities were executed fully. After discussion between CTB (USAID, KNCV and FHI) and NTP during the year 3 work planning process, the project decided to shift to a more provincial focus in year 3. This approach has been agreed upon by all partners, and will include strengthening of the project staff base at provincial level with the recruitment of new staff, planning more activities at provincial level compared to central and increasing direct communication with provincial NTP departments for planning and reporting. The later will enable improved access to data for reporting, so that the project will more easily measure its contribution to major NTP indicators than in previous years.

2. Introduction

To help Mozambique reach targets as delineated in the current National TB Strategic Plan (NSP), CTB supported NTP's efforts to prevent the spread of susceptible and drug resistant TB by improving case detection through community engagement activities, high quality diagnostics, high quality of care for all categories of patients (TB, TB/HIV, MDR-TB and pediatric TB), strengthening the TB surveillance system, and supporting the first national TB prevalence survey in Mozambique. Central level support focused on policy and guideline development, revision and adaptation. Community-based DOTS (CB-DOTS), the pillar of CTB interventions in Mozambique, focuses on contact investigation, active case finding and integrated TB/HIV community care. CTB activities were developed to align with the NTP NSP 2014–2018, and consultation with other projects/programs supporting the NTP, especially Global Fund (GF), was done to avoid duplication of funding in activities and ensure leveraging of resources for maximum results.

In year two, the project continued with year one activities and strengthened coordination with other partners and GF in implementing successful approaches and applying innovative strategies and new tools to support MOH efforts to prevent the further spread of susceptible and drug-resistant TB. With case notification still a challenge and way below the WHO minimum target of 70%, the project efforts and approaches, including synergies working with other FHI 360 projects and partners, will focus on accelerating case detection, maintaining treatment results for susceptible TB and improving TB/HIV collaborative activities. The project will continue to draw from existing HIV and TB CAP/CARE toolkits, and will focus on TB, TB/HIV, ND&R and other important TB related health problems. Technical assistance will be provided to MOH at central, provincial and district level and to the CB-DOTS implementing partners in order to facilitate the implementation of national policies related to TB/HIV collaborative activities. The CTB team actively participates in the TB/HIV task force technical meetings along with the NTP and other partners and coordinates the implementation of TB/HIV collaborative activities.

The project is implemented in 4 provinces (Nampula, Zambezia, Tete and Sofala) covering 64 districts: all districts in three provinces of Nampula, Tete and Sofala and 13 of the 22 districts in Zambezia province. The provinces were identified by the NTP based on defined priorities (population size, disease burden, and as a direct response to the USAID mission prioritization process targeting provinces to receive USG funding. Approximately 56% of the country's population live in the CTB provinces. In implementing CB-DOTS activities, eight subawards have been signed with national/international organizations; ADPP in 17 districts of Nampula (7) and Zambezia (10) provinces, Damien Foundation (DFB) in 22 districts of Tete (15) and Sofala (7) provinces, ComuSanas in 6 districts of Sofala province, OLIPA-ODES in 8 districts of Nampula and the Provincial Directorate of Health (DPS) in 3 districts of Zambezia province. (See Figure 1 showing project coverage).

The level of investment in terms of country new buy-in for year 2 was similar to year one. However, given the short period of implementation in year one, the project carried over additional funding to year two to support activity implementation for a total of \$5.7 million budget in year two.

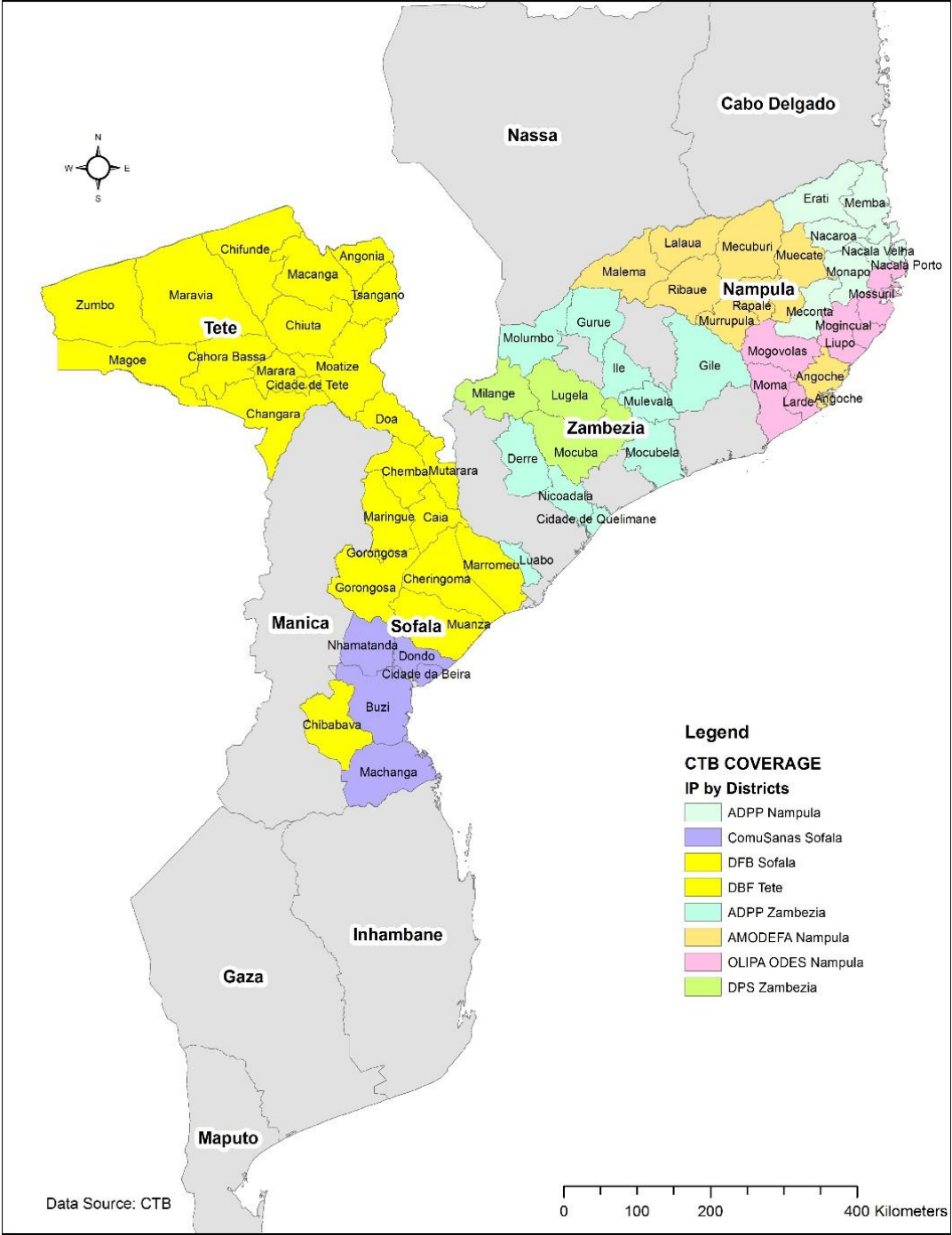
In year two, the project continued to invest in 10 key technical areas as listed in Table 1 below, with sub-objective 8 and 9 not addressed by CTB.

Table 1: CTB Technical Areas by Objective

Objective 1. Improved access to quality patient centered care for TB, TB/HIV and MDR-TB services	
Sub objectives	1. Enabling environment
	2. Comprehensive, high quality diagnostic network
	3. Patient-centered care and treatment
Objective 2: Prevention of transmission and disease progression Sub objectives	
Sub objectives	4. Targeted screening for active TB
	5. Infection control
	6. Management of latent TB infection
Objective 3: Strengthened TB platforms	
Sub objectives	7. Political commitment and leadership

	10. Quality data, surveillance and M&E
	11. Human resource development
	12. Technical supervision

Figure 1: CTB provincial and district coverage



3. Country Achievements by Objective/Sub-Objective

Objective 1. Improved Access

Sub-objective 1. Enabling environment

To strengthen treatment adherence, CTB promoted the creation of community support groups (GAAC TB) consisting of ex and current TB patients. The process was championed by community health workers (CHW) in close coordination with health facility (HF) staff.

Key Results

Thirty one TB support groups were established with CTB support representing a 48% (31/64) achievement of planned target. This low performance is attributed to the delay of startup of CB DOTS activities in CTB provinces. The groups' total membership was 272 (M 143, F 129) TB patients. Criteria for group membership include being a current or ex-TB patient, and living in the same area for easy contact. The group members will in the future be "TB Champions" with the capacity to advocate for improved TB prevention and care services. Current group activities include treatment support among members, community education on TB prevention, care and infection control, and tackling issues related to stigma. The group members also visit the health facilities to collect TB drugs to assist other TB patients, thus reducing the transportation costs for individual members. This allows more time to focus on other activities, such as farming and income generation. However, attention is taken to ensure that each member has an opportunity to go to the HF, not just to collect TB drugs (for all members), but also for clinical consultation. With these treatment support groups, we achieved 100% treatment adherence for the 16 TB patients who are members of TB support group members with treatment results in Tete province.

Figure 2: TB support group members in Tete City (Credit: Dr. Francisco Luis, PTO Tete)



In APA 2, CTB reproduced and distributed 4,000 Information Education and Communication (IEC) flyers in CTB provinces. 500 TB flyers (four types) were distributed to the TB support groups for their use and dissemination. One successful example was in Tete province, where out of the 77 TB patients on treatment and participating in TB treatment support groups, 21% (16/77) completed their treatment successfully, with zero lost to follow up reported from the group members. The remainder continue on treatment.

Figure 3: IEC flyers Reproduced by CTB and used by adherence groups and CHW during education sessions



The IEC flyers are also disseminated by CHW with over 2,600 education sessions conducted in both community and HF settings. A total of 104,881 (M 43,448 and F 61,433) people were reached through the sessions during year two. In HFs in CTB districts, these flyers are also given to patients in other sectors to take home.

Table 2: Sub-objective 1. Enabling environment

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target Y2	Result Y2
1.2.1	1.2.1. Number of current/ex-TB patient groups engaged at the community level and also linked with the NTP	<p>Description: Number of current/ex-TB patient groups engaged at the community level and also linked with the NTP</p> <p>Indicator Value: Number</p> <p>Level: National and Challenge TB geographic areas</p> <p>Numerator: Number of current/ex-TB patient groups engaged at the community level and also linked with the NTP.</p>	0	64 Groups	31 Groups 272 (M 143, F 129)

1.4.1	One or more components of the patient-centered approach are adopted into routine practice/policy	Description: One or more components of the patient-centered approach (i.e. universal access, consider patient needs, respect rights, provide quality care, establish trust, participate in process, and empower involvement) are adopted into routine practice/ policy Indicator Value: Yes/No Level: National	Yes	Yes	Yes
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Sub-objective 2. Comprehensive, high quality diagnostics

The project is providing technical assistance to the NTP and NRL at central and provincial levels to ensure quality TB lab management services by supporting activities including external quality assurance of TB microscopy services, development of guidelines/forms, on-the-job training, reference laboratory (RF) network strengthening and implementation of specimen transportation systems.

Key Results

The project supported the first ever annual reference lab meeting, with the objective to discuss the functioning of the country's three reference laboratories. This was a direct response to constant challenges and constraints reported especially in relation to the two RRL of Nampula and Beira, which had been functioning below expected performance. The meeting was thus an opportunity to technically solve issues in the reference labs and define the best approach for the technical assistance provided by CTB and American Society for Microbiology (ASM). Immediate results were the advocacy to change staff in Beira (completed in Quarter 4) and the decision to expand Drug Sensitivity Testing/Line Probe Assays (DST/LPA) to Nampula. CTB supported two weeks of Long Term Technical Assistance (LTTA) to Sofala and Nampula RRL. In addition, three supportive lab visits were conducted in year 2 (2 to Nampula and 1 to Beira), with the objective to provide on-the-job training and mentoring of RRL technical staff to improve functioning and overall results of the 2 RRLs. The number of culture samples processed immediately increased from 8 to 30 per day following this intervention.

To ensure recommendations from the visits were properly implemented, the project supported two follow-up monitoring visits together with both the NRL and the CTB lab officer. As a result of the LTTA and monitoring visits, Nampula RRL then scored one star out of the five SMLTA/FOGELA requirements for lab accreditation, with the implementation of the Quality Management System. Validation of DST by sending positive cultures to NRL and processing panels sent by National Institute of Communicable Disease (NICD) was initiated. Despite the support from multiple partners including INS, CTB and other lab partners, Beira RRL showed no significant improvement, with no staff commitment as the biggest roadblock. In addition, there were issues with the negative pressure system, so that culture and DST could not be performed. There was also a water shortage in the lab. CTB communicated with a delegation from National Institute of Health (NIH) in Beira, which resulted in the assignment of three new lab technicians, who have already begun working.

Other interventions conducted to address some of the challenges in both Nampula and Beira RRL lab through CTB support include:

Nampula-

- Procurement and installation of a new 24 BTU air conditioner to support proper functioning of critical equipment that is installed in the technical area (BACTEC MGIT 960, incubators).
- Support with the installation of a drainage system to eliminate water infiltration into the technical area
- Replacement of hepa filters in 1 Bio Safety Cabinet (BSC). Although due to urgent need to change the pre hepa filters found at the time of repair, the BSC was declared unsafe for operation and further support is necessary.

Beira –

- Procurement and installation of two water tanks to provide running water to the lab, as there previously was none.
- Maintenance of the negative pressure system, which enabled the reintroduction of culture and DST.

Figure 4: Installed water tanks with a total capacity of 10,000 liters in Beira RRL (Photo credit: Daniel Bomba 2016)



With support from the CTB project, panel testing from Milan Supra National Reference lab (SRL) was sent to Maputo National Reference Lab. The final evaluation received from the SRL showed acceptable performance for DST first and second line and LPA first line (Annex I: Certificate of Participation).

One of the challenges in panel testing was the constant power failure, which led to the need to repeat the process several times. As a measure to guarantee a constant supply of electricity, NIH acquired and installed a generator at the NRL.

In year 2, four supportive supervision visits were conducted in CTB target provinces covering 24 laboratories. Findings included:

- Efforts to separate TB specimen processing from other laboratory tests are being performed according to WHO recommendations
- Re-examined slides had a 100% concordance rate
- In some of the labs, there were very weak biosafety measures in place, including a lack of proper waste disposal, inappropriate lab coats, and the practice of crushing slides before incineration.
- LED microscopes are in place, but not in use due to lack of reagents
- Technicians lacked proficiency so that quality indicators were not measured
- There was a lack of completion and standardized forms to show evidence of the work carried out
- A weak specimen transport system contributes to underutilization of GeneXpert.

In order to overcome some of the challenges identified during the supportive supervision visits, a smear microscopy and GeneXpert manual were developed by NRL technicians and the CTB lab officer. Once finalized and approved early next year, the manual will be disseminated through on-the-job

training for lab technicians. It is expected that these challenges will be addressed once the manual is in use.

Three blind rechecking exercises were conducted in Nampula, Sofala and Tete provinces. More than 50% of labs from the three provinces supported by CTB participated in the activity, except Nampula where only 39% participated.

Table 3: EQA Results in APA 2

Province	# of labs	# of labs enrolled for EQA	Nº labs with acceptable performance
Zambézia	54	44 (81%)	33 (75%)
Sofala	28	27 (96%)	25 (92%)
Tete	40	28 (70%)	23 (82%)
Nampula	56	22 (39%)	20 (91%)

The challenge of blind rechecking is a lack of standard implementation protocols within Mozambique leading to each province conducting blind rechecking using different procedures. As a solution, CTB is leading the development of a national guideline which will standardize blind rechecking across the country. This initiative began in APA2 and will continue into APA3.

As a response to the NTP National Strategic Plan (NSP) to expand the microscopy lab network, CTB Mozambique, in close coordination with the NTP (central and provincial levels), conducted assessments for peripheral lab expansion based on lab coverage, distance, and newly created administrative districts without labs to identify HF with needed improvements. As a result of this exercise, four sites across four provinces have been identified to benefit from minor interventions to accommodate microscopy laboratory functioning. Currently minor structural changes to the existing infrastructure are in progress at the four sites.

Table 4: Result of Assessments for peripheral lab expansion

Province	District	HF	Assessment results
Sofala	Nhamatanda district	Tica HF	Tica HF receives an average of 250 patients per day with around 60% requesting lab exams. The samples/patients are referred to the nearest lab (Dondo) for processing and the average turnaround time for test results is 5 days. Tica HF currently has 50 TB patients on treatment.
Nampula	Larde district	Larde HF	Larde is a newly created district due to recent administrative divisions restructuring by the Government. The district has no functional laboratory. Lab samples, as well as patients, are referred to Moma district and Nampula cidade for processing, which are both over 100 Kilometers (Km) away. In the rainy season, the district is further isolated due to lack of access. At times certain referral facilities are completely inaccessible to these communities.
Zambézia	Milange district	Mongue HF	Milange district has a population of 463,759, a catchment area of 9,842 Km ² and only one laboratory. The large geographic coverage of the catchment area, coupled with lack of reliable public transportation means that some of the population have limited or no access to health and laboratory services.
Tete	Tsangano district	Ntengo waMbalame HF	Ntengo waMbalame HF has good laboratory coverage of 1 lab to 100,000 persons, which meets WHO standards. However, the distance between the HF and community is a barrier to accessing services as many people within this catchment area have to walk between 45 and 50 kms to receive health services.

There are currently 26 GeneXpert machines functional in the four provinces where CTB works, which have been supported by CTB. Of these, the project has supported the installation of GxAlert in 18 machines. GxAlert enables patient results to be sent immediately via SMS, allowing the provincial lab supervisor, NTP supervisors and other health professionals to have access to results in a timely fashion so that treatment can be initiated quickly. Currently, data on test results received and patients initiated on treatment through this system is not available to CTB; however, efforts are being made at the central level within NTP and Health Alliance International (HAI) (who provide TA on GeneXpert machine installation, assistance and maintenance) to ensure that CTB has access to this data. CTB will install GxAlert in the remaining 8 machines in the first quarter of APA3. The NTP plans to increase GeneXpert capacity as utilization is increasing with the change in national algorithm authorizing the use of GeneXpert as a first line of diagnosis.

Additionally, CTB is piloting a Specimen Transportation System (STS) in six districts across 2 provinces (Nampula and Zambezia). Identification of districts to participate in the pilot was done in close coordination with NTP at the provincial level. STS requires dedicated motorbikes and drivers in each district so that samples from peripheral labs and hard-to-reach HFs can be transported to district level labs for processing using microscopy and GeneXpert, where available. CTB developed the specimen transport system guideline, which includes a form to be filled by the drivers, as well as a monitoring tool which is completed by the implementing agencies (Annex II *Directriz para Implementação do Sistema de Referenciamento de Amostras em Distritos Seleccionados nas Províncias de Zambézia e Nampula*; Annex III: *Formulário para Monitoria do Sistema de Referenciamento de Amostras*; Annex IV: *Formulário para Analise Mensal de Sistema de Referenciamento de Amostras*). Results from this intervention will be reported in APA 3. If results from this pilot are positive results and the system appears scalable, CTB will strengthen the system for future expansion.

Figure 5: CTB motorbike drivers trained in Zambézia Province September 2016 (Photo credit: Nureisha Cadir) and Training Manual for Sample Transportation.



DIRECTRIZ PARA IMPLEMENTAÇÃO DO SISTEMA DE REFERENCIAMENTO DE AMOSTRAS EM DISTRITOS SELECIONADOS NAS PROVÍNCIAS DE ZAMBÉZIA E NAMÍBIA



Maputo, Agosto 2018
1ª Edição

Table 5: Sub-objective 2. Comprehensive, high quality diagnostics

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target	Result
				Y2	Y
2.1.2	A current national TB laboratory operational plan exists and is used to prioritize, plan and implement interventions	<p>Description: This indicator measures whether or not a country has a defined TB laboratory operational plan (work plan) within the larger National TB Strategic Plan or National Laboratory Strategic Plan. The country and partners use the operational plan to design and implement priority activities to strengthen TB diagnostic services and the network for TB control.</p> <p>Indicator Value: Score based on the following: 0= Operational plan not available 1= Operational plan available 2= Operational plan</p>	0	1	0 (Due to competing priorities, the MOH has not yet identified a consultant to lead the development of the National Lab Strategy).

		<p>available and follows standard technical and management principles of a quality work plan required for implementing the necessary interventions to build and strengthen the existing TB laboratory network (reference: "Practical Handbook for National TB Laboratory Strategic Plan Development"; http://www.stoptb.org/wg/gli/assets/documents/Lab_Strategic_Handbook.pdf)</p> <p>3= Operational plan available and meets annual implementation targets</p>			
2.2.6	<p>Number and percent of TB reference laboratories (national and intermediate) within the country implementing a TB-specific quality improvement program i.e. Laboratory Quality Management System (LQMS).</p>	<p>Description: This indicator measures the percentage of TB reference laboratories in the country that are implementing a quality management system for continuous improvement of all aspects of laboratory operations to assure accuracy and reliability of testing, disaggregated by national and intermediate levels. Provide a score/rating for every reference laboratory implementing LQMS, either the "GLI Stepwise Process towards TB Laboratory Accreditation" (scoring = phase 1-4) or SLIPTA/SLMTA for TB (scoring=stars 1-5).</p> <p>Indicator value: Number and percent (Reference: Laboratory Quality Management Systems Handbook; http://www.who.int/ihr/publications/lqms/en/)</p> <p>Numerator: Number of TB reference laboratories implementing a quality improvement program</p> <p>Denominator: Total number of TB reference laboratories in the country</p> <p>Level: National and/or Intermediate</p>	<p>100% (3/3)</p> <p>Maputo NRL - Accredited Nampula RRL - 0 star Beira RRL - 0 star</p>	<p>100% (3/3)</p> <p>Maputo NRL - Accredited Nampula RRL - 1 star Beira RRL - 1 star</p>	<p>100% (3/3)</p> <p>Maputo NRL - Accredited Nampula RRL - 1 star Beira RRL - 0 star Beira RRL is still at 0 star as the audit from SLAMTA/FOGELA was postponed with no data available.</p>

2.2.7	Number of GLI-approved TB microscopy network standards met	<p>Description: This indicator measures whether or not a country has met the 11 GLI-approved standards for the TB microscopy network. A CTB checklist is provided to assess fulfilment of the requirements for each standard. Identify numerically (1-11) which standard(s) have been met. (Reference: "TB Microscopy Network Accreditation: an assessment tool"; http://www.who.int/tb/laboratory/microscopy-network-accreditation-assessment-tool.pdf)</p> <p>Indicator value: Number</p> <p>Numerator: Total number of standards met (NE=not evaluated, 0=no standards have been met).</p>	0	4	4 (3, 6, 7, & 11)
2.3.1	Percent of bacteriologically confirmed TB cases who are tested for drug resistance with a recorded result.	<p>Description: This indicator measures the percentage of bacteriologically confirmed TB cases that are tested for drug resistance and also have results recorded in the TB register (disaggregated by new and previously treated cases). Drug resistance testing includes phenotypic (culture DST) and genotypic (molecular DST by GeneXpert, LPA or other molecular technologies).</p> <p>Indicator Value: Percent</p> <p>Level: National and Challenge TB geographic areas</p> <p>Numerator: Number of bacteriologically confirmed TB cases that are tested for drug resistance and have results recorded in the TB register.</p> <p>Denominator: Total number of bacteriologically confirmed TB cases notified during the reporting period</p>	<p>3.5% of new patients (n=1896)</p> <p>11.2% of retreatment patients (n=460)</p> <p>Nationwide 2014 Notification data</p>	N/A	<p>15% (2,009/13,075)</p> <p>CTB province (GeneXpert BC data Jan to Jun 2016.) Data from DST and LPA not yet available. Data not disaggregated by new and retreatment patient despite new use of new instrument. CTB will continue to support and reinforce the need to get disaggregated data in APA 3</p>

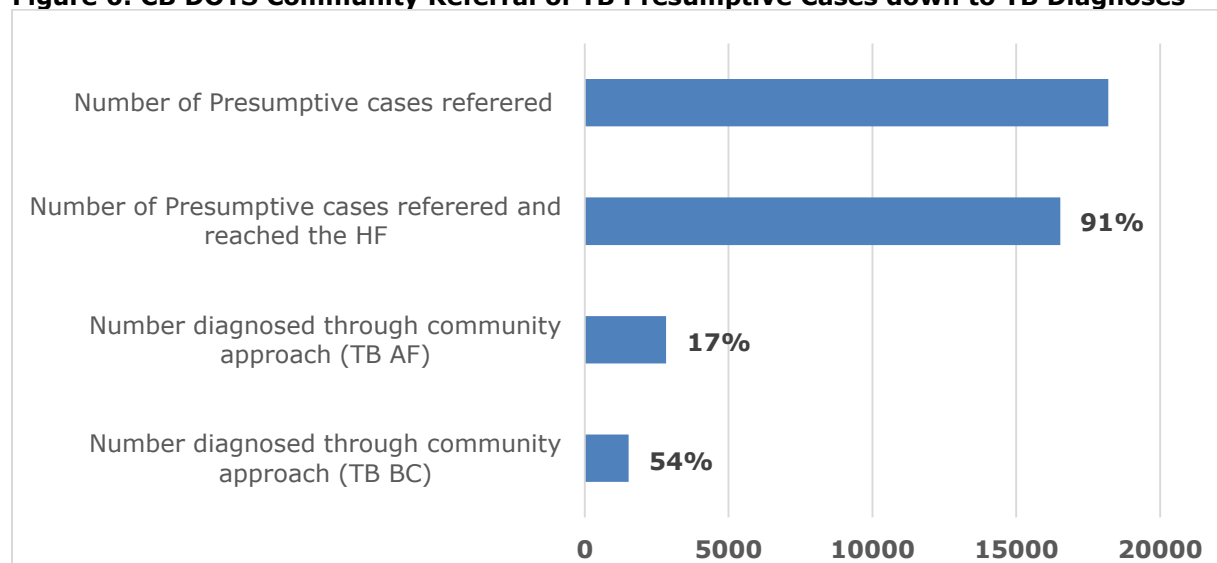
Sub-objective 3. Patient-centered care and treatment

Despite delays in the rollout of CTB CB-DOTS, during a four month period in APA 2, 1,211 (M 729, F 482) people were trained in CB-DOTS. Of those trained in CB-DOTS 1,071 (M 625, F 446) were Community Health Workers (CHWs) and 140 (F 36 M 104) peripheral health professionals. CHW received CB-DOTS kits which included CB-DOTS educational materials, a bicycle to allow for expanded reach within communities and social marketing materials such as a hat and shirt.

Key Results

Through the activities of community volunteers, 18,204 (M 9,105, F 9,099) presumptive cases were referred to health facilities (HF) with 16,538 (M 8,762, F 7,776) (91%) receiving TB screening at the HF. Of the total who visited a HF and were screened, 17% (2,825/16,538) were diagnosed with TB (all forms), with 54% of these diagnoses (1,530/2,825) having bacteriologically confirmed TB. 100% of diagnosed cases were initiated on treatment.

Figure 6: CB DOTS Community Referral of TB Presumptive Cases down to TB Diagnoses



Five central level CTB supportive supervision visits were conducted in CTB provinces during APA2. An example was a visit to Sofala province, where results showed excellent collaboration between NTP and CB-DOTS Implementing Agencies (IA), with presumptive TB cases referred to the TB sector using the CTB community referral form and then receiving adequate services. The TB sector provided timely feedback of results to the community HCW.

In year two, 596 (M284, F312) Maternal Child Health Nurses (MCHN) were trained in screening, diagnosis and treatment of pediatric TB at all health facility entry points. Trainings reached facilities which focus on pre and post-natal visits, Consultation of Children at Risk (CCR), as well as facilities that manage TB index cases of children under 5 years old who are on prophylaxis. Within CTB provinces, there has been an increase in the notification of all forms of TB among children 0-14 years old, from 10% (1,390/13,355) between January and June of 2015 to 12% (1,675/13,911) between January and June of 2016.

In recognition of the fact that diagnosis and management of MDR-TB is a continuing, on-going challenge in Mozambique, CTB supported a national MDR-TB workshop to train trainers in clinical and programmatic management of MDR-TB. A total of 42 (20 F, 22 M) clinicians across the country participated in the training and were accredited as Trainers of Trainers (TOT). Follow-up cascade trainings in CTB target provinces were conducted by the CTB MDR-TB officer. These trainings at the provincial level accredited an additional 192 (M 131, F61) clinicians.

CTB continues to provide mentoring to the trained clinicians through onsite follow-up supervision visits. During these visits, improvements were noted in the management of MDR-TB patients with:

- The MDR-TB register showing that clinicians are requesting regular smear tests for conversion control among MDR-TB patients, even though, fewer culture tests are requested by clinicians.
- There has been an increase in the number of requests for GeneXpert exams in high risk groups (retreatment cases, HIV+ and children) verified in the clinical register.
- Trained clinicians are now using GeneXpert to test other body fluids, such as gastric fluid.
- There is also improved coordination between clinicians and the lab.

To help increase MDR-TB detection rate and better use of MDR-TB data, the project supported the following:

- The review, printing and distribution of 6,000 GeneXpert algorithms. The algorithm was disseminated during different types of trainings, and supportive supervision visits, where mentoring and on-the-job training assistance was provided.
- The implementation and use of the excel-based MDR-TB data base. CTB provided assistance with updating the data base at provincial level and ensuring data was entered on an ongoing basis.
- In Q1 APA3, CTB will report on the MDR cohort analyses for CTB provinces to support improved patient management and treatment outcome.

In APA 2, CTB played a key role in the introduction of New Drugs and Regime (ND&R) for MDR-TB in Mozambique. The CTB MDR-TB officer, a member of the technical working group, helped conduct a bibliographic review, supported in the technical discussion of possible treatment regiments to be used, drafted a letter to the Minister of Health for approval in the introduction of ND&R, and provided expertise at the technical working group for the management of MDR-TB. The MDR-TB ND&R request has been approved by the Ministry of Health. Quantification of drugs have been completed and submitted to USAID by the NTP. Currently, Medicine San Frontier (MSF) has completed the importation of Bedaquiline (BDQ), Delamanid (DLM) and Linezolid (LZ) to be used in seven patients on treatment. Both CTB and MSF are part of a larger treatment review technical working group led by the NTP.

CTB contributed to strengthening TB services in correctional facilities through several activities. CTB, NTP and the National Prisons Service (SERNAP) worked closely to develop IEC materials for prisons. These IEC materials were approved by SERNAP and NTP to be used nationwide. CTB reproduced 1,200 copies of the IEC materials which were disseminated during prison trainings targeting prison guards and cell in mates. A total of 207 (M 197, F 10) prison guards and inmates from 8 prisons in CTB provinces were trained by the project and conducted systematic prison screening activities in eight prisons with the support of CTB provincial technical officers and CTB implementing partners. 30 prisons inmates were diagnosed with TB AF and initiated treatment out of the 161 referred (19% 30/161).

To strengthen coordination and collaboration between NTP, CB-DOTS implementing partners, and CTB, a 5 day annual partners meeting was held in September 2016 in Beira cidade, Sofala province. The meeting was attended by approximately 40 people including the CTB team, KNCV, FHI360/CHASS, NTP national, provincial and districts levels, and implementing agencies from the 4 target provinces. The key results of the meeting were the development of a revised CB-DOTS implementation model based on gaps and challenges identified in years 1 and 2, and decisions on how to improve project results by implementing specific interventions with high yield, targeted to district needs, including a robust contact investigation system and new active case finding strategies.

Figure 7: FHI360 National Director Dr. Dario, Dr. Arminda (CHASS), Dr. Zaina (CTB Chief of Party), Dr. Jeroen (KNCV) and Dr. Cesar (DFB) having a discussion during CTB Annual Meeting



To improve coordination and collaboration between partners, especially PEPFAR HIV partners for TB/HIV collaborative activities, CTB led 32 provincial task force meetings where provincial partners, NTP provincial representatives, and the provincial directorate of health met to discuss related health issues. At these meeting challenges related to implementation of activities, especially TB /HIV collaborative activities, were identified and recommendations to address these challenges formulated

Table 6: Sub-objective 3. Patient-centered care and treatment

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target	Result
				Y2	Y2
3.1.1	Number and percent of cases notified by setting (i.e. private sector, pharmacies, prisons, etc.) and/or population (i.e. gender, children,	Description: The number of TB cases all forms (i.e. bacteriologically confirmed plus clinically diagnosed, new and relapse) reported by the NTP disaggregated by setting (i.e. private sector, pharmacies, prisons, etc.) and/or population (i.e., gender, children, miners, urban slums, etc.) and/or	CTB Provinces 28,255/ 58,270 (48%) Tete 3,494/ 58,270 (6%) Nampula 7,236/ 58,270	31,830/ 65,262 (49%) (4 CTB target provinces)	20,655/ 40,755 (51%) NTP data December 2015 to June 2016 Tete 3,706/ 20,655 (18 %)

	miners, urban slums, etc.) and/or case finding approach	<p>case finding approach (ICF, ACF, CI). Private sector providers should be described according to context and case finding approach, for example, type of provider targeted (i.e. ,for profit medical clinics, pharmacists, informal providers, private hospitals, etc.)</p> <p>Indicator Value: Number and where available, percent</p> <p>Level: National and Challenge TB geographic areas</p> <p>Numerator: Number of TB cases all forms (bacteriologically confirmed + clinically diagnosed; includes new and relapse cases) reported (by setting/ population/ case finding approach) nationally and in Challenge TB geographic areas in the past year</p> <p>Denominator: Total number of TB cases (all forms) notified nationally and in Challenge TB geographic areas.</p>	<p>(12%) Zambézia 9,881/ 58,270 (18%) Sofala 7,644/ 58,270 (13%)</p>		<p>Nampula 5,524/ 20,655(27 %) Zambézia 5,836/ 20,655 (28%) Sofala 5,599/ 20,655 (27%)</p>
3.1.4	Number of MDR-TB cases detected	<p>Description: Total number of bacteriologically confirmed MDR-TB cases diagnosed. Project should follow the MDR-TB/Xpert algorithm in country regarding whether Rifampicin-resistant TB cases (RR-TB) should be counted as confirmed MDR-TB. If a country's algorithm states that a RR-TB cases is automatically assumed to be MDR-TB (i.e. no further DST required), then RR-TB should be included in the number of confirmed MDR-TB cases diagnosed. Otherwise, RR-TB should be excluded until proven via further DST that the case is a confirmed MDR-TB case.</p> <p>Indicator Value: Number</p> <p>Level: National and Challenge TB geographic areas</p> <p>Numerator: Number of bacteriologically confirmed MDR-TB cases diagnosed</p>	482	572	<p>322 National (January to June 2016)</p> <p>108 CTB Provinces (January to June 2016)</p>

		during the reporting period			
3.1.13	Number and percent of presumptive TB patients referred by community referral systems	Description: Proportion of presumptive TB patients referred by community referral systems Indicator Value: Percent Level: National and Challenge TB geographic areas Numerator: Number of presumptive TB patients referred by community referral systems Denominator: Total number of presumptive TB patients	22,180	89,124	18,204 (May to September 2016) Referred. (Total number of presumptive TB patients data is not available. CTB is working on obtaining this data)
3.1.14	Number and percent of total cases notified that were referred or diagnosed via CB approaches	Description: Proportion TB cases (all forms) notified that were referred or diagnosed via CB approaches Indicator Value: Percent Level: National and Challenge TB geographic areas Numerator: Number of notified TB cases (bacteriologically confirmed + clinically diagnosed; includes new & relapse cases) that were referred or diagnosed via CB approaches Denominator: Total number of cases notified (bacteriologically confirmed + clinically diagnosed; includes new & relapse cases)	CTB provinces 4,420/28,253 (16%) Tete 463/3,492 (13%) Nampula 1,229/7,236 (17%) Zambezia 1,815/9,881 (18%) Sofala 913/7,644 (12%) (NTP report, 2014)	12,732/31,830 (40%) (4 CTB target provinces)	2,825 (4 CTB target provinces) (Percentage could not be calculated as NTP data is only available up to June 2016, while CTB data is up to September 2016)

3.2.1	Number and percent of TB cases successfully treated (all forms) by setting (i.e. private sector, pharmacies, prisons, etc.) and/or by population (i.e. gender, children, miners, urban slums, etc.).	<p>Description: The proportion of a cohort of TB cases (all forms, bacteriologically confirmed and clinically diagnosed, new and relapse) registered in a specified period that were successfully treated, whether with bacteriologic evidence of success ("cured") or without ("treatment completed") by setting (i.e. private sector, pharmacies, prisons, etc.) and/or by population (gender, children, miners, urban slums, etc.) and/or risk population groups defined by national policy (IDUs, diabetics, prisoners, etc.). There may be overlap between settings and groups. Disaggregation by risk population is required in contexts where Challenge TB is providing treatment support for a specific group according to the annual work plan or in contexts where operations research allows for disaggregation and comparison across groups.</p> <p>Indicator Value: Percent</p> <p>Level: National and Challenge TB geographic areas</p> <p>Numerator: Number of new and relapse TB cases (all forms) registered in a specified period that were cured or completed treatment</p> <p>Denominator: Total number of new and relapse TB cases (all forms) registered in the same period</p>	20,196/23,009 (88%)	11,459/12,732 (90%)	<p>2014 cohort National</p> <p>21,646/24,381(89%)</p> <p>CTB Areas</p> <p>12,221/13,590 (90%)</p> <p>Tete 1,166/1,244 (94%)</p> <p>Nampula 3,482/3,920 ((89%</p> <p>Sofala 3,207/3,610 (89%)</p> <p>Zambezia 4,366/4,816 (91%)</p>
3.2.4	Number of MDR-TB cases initiating second-line treatment	<p>Description: The number of bacteriologically confirmed, clinically diagnosed or unconfirmed MDR-TB cases started on second-line treatment during the reporting period. Unconfirmed MDR-TB cases are those awaiting C/DST results. RR-TB may fall under confirmed or unconfirmed depending on the country's MDR-TB</p>	482	572	<p>314 National</p> <p>102 CTB provinces (Jan to June 2016)</p>

		diagnosis algorithm. Indicator Value: Number Level: National and Challenge TB geographic areas Numerator: The number of confirmed or unconfirmed MDR-TB patients started on second-line treatment in the reporting period			
3.2.7	Number and percent of MDR- TB cases successfully treated	Description: The proportion of confirmed MDR-TB patients successfully treated (cured plus completed treatment) among those enrolled on second line TB treatment during the reporting period (where applicable disaggregation by HIV status, XDR status). RR- TB may fall under confirmed MDR-TB depending on the country's MDR-TB diagnosis algorithm. Indicator Value: Percent Level: National and Challenge TB geographic areas Numerator: Number of confirmed MDR-TB cases successfully treated (cured plus completed treatment) Denominator: Total number of confirmed MDR-TB patients enrolled on second line TB treatment during the reporting period.	222 (46%)	320/572 (56%)	52% (26/50) CTB provinces 2013 cohort

Objective 2. Prevention

Sub-objective 4. Targeted screening for active TB

Data collection tools, including contact investigation tools, have been developed and are currently in use by CB-DOTS CHWs to refer contacts of TB index cases to HF for diagnoses and then treatment or prophylaxis.

Key Results

Through the CB-DOTS activities, 422 (F 219 M 203) children under the age of 5 were referred. Referrals were below target due to the delay in the start-up of activities. CTB will continue to provide TA to trained CHW to ensure that referrals are made. Out of those referred, 63% (267/422: F 156 M 111) initiated Isoniazid Preventive Therapy (IPT).

Table 7: Sub-objective 4. Targeted screening for active TB

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target	Result
				Y2	Y
4.1.1	Number and percentage of eligible index cases of TB for which contact investigations were undertaken	Description: The proportion of eligible index cases of TB for which contact investigations were undertaken Indicator Value: Percent Level: National and Challenge TB geographic areas Numerator: Number of index cases of TB for which contact investigations were undertaken during the period of assessment Denominator: Total number of index cases registered during the period of assessment	0	11,459/12,732 (90%)	22% (622/1,530) bacteriologically confirmed TB cases (BC) through CTB CB-DOTS approach
4.1.2	Number and percent of children (under the age of five) who are contacts of bacteriologically-confirmed TB cases that are screened for TB	Description: The proportion of children (<5) who are contacts of bacteriologically-confirmed TB cases that are screened for TB (investigations for TB must be performed in accordance with existing national guidelines) Indicator Value: Percent Level: National and Challenge TB geographic areas Numerator: Number of children (<5) who are contacts of bacteriologically-confirmed TB cases that are screened for TB Denominator: Total number of children (<5) who are contacts of bacteriologically-confirmed TB cases	0	11,000/13,751 (80%)	422/2,295 (18%) (F 219, M 203) under 5 years contacts were referred. Out of these, 63% (267/422: F 156, M 111) initiated IPT

Sub-objective 5. Infection control

CTB supported provincial and district level infection control activities through conducting assessments within 32 HFs. In addition, CTB advocated for the development of HF infection control plans, as well as the creation of HF infection control teams. In addition, CTB monitors, trains, and supports infection control teams, if they are to be established.

Key Results

CTB Provincial Technical officer (PTO) assessed the outcome of recommendations provided during the infection control (IC) assessments conducted in APA1 in select health facilities. As a result of this follow-up, most 29/32 (91%) HFs now have an infection control plan that is being implemented. According to these plans, 29 HFs provide priority to patients with a cough. Additionally, HFs have developed cough protocols and other basic IC measures (e.g., opening windows). As part of the infection control plans, FAST is now implemented, which has led to separation and referral of patients with coughs in waiting rooms to consultation rooms for quick diagnostic evaluation.

The project has supported the expansion of the FAST strategy in CTB provinces to 32 HFs where 181 (M 62, F119) cough officers (HF support staff) were trained in the FAST strategy. Upon completion of training, they are henceforth referred as "cough officers" and identified as such within the HFs. FAST cough officers have successfully identified and separated 468 presumptive TB cases and referred these to the NTP sector for further screening. Of the 468 identified, 41 were diagnosed with active TB 9% (41/468), out of which, 33 where BC TB.

In project supported provinces 8% of all health care workers were found to have TB between Jan and June 2016. This is 240 times higher than the TB rate in the general population.

Table 8: Sub-objective 5. Infection control

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target	Result
				Y2	Y
5.1.3	Number and percent of TB IC (i.e. FAST) certified health facilities	<p>Description: This indicator measures the number and percent of health facilities implementing FAST (i.e. based on the criteria of FAST strategy - "Find cases Actively, Separate safely, and Treat effectively"). Note this measurement requires survey of facilities selected through lot quality assurance sampling and by using the 10-item modified CDC monitoring tool (health facility scoring YES on items 2, 4 and 5 is qualified as implementing FAST).</p> <p>Indicator Value: Percent</p> <p>Level: National and Challenge TB geographic areas</p> <p>Numerator: Number of TB IC certified health facilities in the area</p> <p>Denominator: Total number of health facilities in the area</p>	6/64 (9%) NTP Report, 2014	32/64 (50%)	<p>32 (100%) facilities implementing certified FAST across 4 provinces of CTB Nampula Tete Sofala Zambezia.</p> <p>181 (M 62, F119) cough officers trained.</p> <p>The trained cough officers have successfully identified and separated 468 presumptive case and referred these to the NTP sector for further</p>

					screening. Of the 468 identified, 41 were diagnosed with active TB (9% 41/468).
5.2.3	Number and percent of health care workers diagnosed with TB during reporting period	<p>Description: This indicator measures the percent of healthcare workers (HCWs) diagnosed with TB (all forms) annually (disaggregated by gender and age). This measurement may require a special study using a validated tool and/or methodology.</p> <p>Indicator Value: Percent</p> <p>Level: National and Challenge TB geographic areas</p> <p>Numerator: Number of HCWs diagnosed with TB (all forms) during past year</p> <p>Denominator: Total number of HCWs in the same year</p> <p>In countries where the NTP does not collect this indicator or is not willing to share the data, Challenge TB should document this challenge.</p>	186/2,069 (9%) NTP Report, 2014	269/2,069 (13%)	8% (85/1,034) CTB provinces Jan to June 2016 NTP data.

Sub-objective 6. Management of latent TB infection

To improve coordination and collaboration between partners, especially with PEPFAR HIV partners for TB/HIV collaborative activities, the CTB is leading provincial task force meetings where provincial partners, NTP provincial representatives, and the provincial directorate of health sit together to discuss all health issues.

Key Results

CTB supported 32 provincial task force meetings. During these meeting, challenges and constraints related to the implementation of activities, especially TB /HIV collaborative activities, are identified and recommendations or solutions to address these challenges are proposed. For example, CTB initiated programmatic efforts to ensure that those eligible for latent TB infection (LTBI) treatment received this through community efforts of implementing partners in contact investigations and support at health facilities to Isoniazid Preventive Therapy (IPT) programs. HFs have begun to use IPT tools and are now prescribing IPT with good success at starting therapy. Challenges remain with ensuring follow-up, adherence and treatment of 6 months. In addition, there are still children in need of this intervention who will benefit from ongoing IPT expansion with CTB support.

Table 9: Sub-objective 6. Management of latent TB infection

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target Y2	Result Y
6.1.2	Percent of eligible persons completing LTBI treatment, by key population and adherence strategy	Description: This indicator measures the percent of eligible persons completing LTBI treatment, by key population and adherence strategy according to national policy Indicator Value: Percent Level: National and Challenge TB geographic areas Numerator: Number of eligible persons completing LTBI treatment Denominator: Total number of eligible persons	0%	40%	51% (2,511/4,923) CTB provinces (Jan to Jun 2016) National data not available
6.1.11	Number of children under the age of 5 years who initiate IPT	Description: The number of children under the age of 5 years who initiate isoniazid preventive therapy (IPT) during the reporting period. Indicator Value: Number Level: National and Challenge TB geographic areas Numerator: The number of children under the age of 5 years who initiate IPT during the reporting period.	17,026 (46%) National	6,875/13,751 (50%) - CTB target provinces	2,666 CTB Provinces National data not available

Sub-objective 7. Political commitment and leadership

CTB is not investing in this activity but will report.

Key Results**Table 10: Sub-objective 7. Political commitment and leadership**

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target Y2	Result Y

7.2.3	Percent of activity budget covered by private sector cost share, by specific activity	<p>Description: This indicator measures the proportion of CTB project activity budget covered by private sector cost share (if not monetary, will require estimation of costs) by specific activity.</p> <p>Indicator Value: Percent</p> <p>Level: Nationally for activities at national scale and in Challenge TB geographic areas for activities focused in specific geographic areas where Challenge TB is working.</p> <p>Numerator: Amount of private sector cost share covering CTB project activity during most recent fiscal year</p> <p>Denominator: Total CTB project activity budget plus private sector cost share amount during the year of assessment.</p>	N/A	N/A	N/A No private sector cost-share was added in APA2 but this will be explored in the future
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Sub-objective 8. Comprehensive partnerships and informed community involvement

CTB is not investing in this activity but will report

Key Results

Table 11: Sub-objective 8. Comprehensive partnerships and informed community involvement

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target	Result
				Y2	Y
8.1.3	Status of National Stop TB Partnership	<p>Description: This indicator measures the status of National Stop TB Partnership by using special questionnaire for collecting relevant country level data</p> <p>Indicator Value: The score based on below: 0= no National Stop TB Partnership exists 1= National Stop TB Partnership established, and has adequate organizational structure; and a secretariat is in place that plays a facilitating role, and signed a common partnering agreement with all partners; but does not have detailed</p>	N/A	N/A	N/A

		<p>charter/plan, and does not meet regularly/ produce deliverables; 2= National Stop TB Partnership established, has adequate organizational structure and in a participatory way has developed detailed charter/plan, but does not meet regularly and does not produce deliverables; 3= National Stop TB Partnership established, has adequate organizational structure, has developed detailed charter/plan, meets regularly and critical deliverables are produced Level: National</p>			
8.1.4	% of local partners' operating budget covered by diverse non-USG funding sources	<p>Description: This indicator measures the proportion of CTB project local partners' operating budgets covered by non-USG funding sources. A special questionnaire for collecting relevant country level data among CTB local partners is available. Indicator Value: Percent Level: Challenge TB geographic areas Numerator: Amount of CTB local partners' operating budgets covered by non-USG funding sources (TGF, WB, EU, ADB, DFID, private donations, investment income, other revenue, etc.) Denominator: Total operating budget of CTB local partners' operating budget (USG + non-USG sources) during the year of assessment.</p>	0	15%	XN/A Data not available. CTB will obtain and share information by December 2016
8.2.1	Global Fund grant rating	<p>Description: This indicator presents Global Fund TB grant performance rating results Indicator value: Score is based on the following: A1 Exceeds expectations A Good performance A2 Meets expectations B1 Adequate B2 Inadequate but potential demonstrated</p>	B1	B1	B1

		C Unacceptable Level: National			
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Sub-objective 9. Drug and commodity management systems

CTB will report on this indicator but no specific activity is planned

Key Results

Table 12: Sub-objective 9. Drug and commodity management systems

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target	Result
				Y2	Y
9.1.1	Number of stock outs of anti-TB drugs, by type (first and second line) and level (ex, national, provincial, district)	Description: This indicator should be used to report the number of stock outs of any type of TB drug at any level of the health system that results in interruption of treatment. Indicator Value: Number Level: This indicator should be reported at whatever level a stock out that results in interruption of treatment occurs.	0	N/A	No national level stock out has been reported.

Sub-objective 10. Quality data, surveillance and M&E

CTB consortium member KNCV contributed to the NTP Prevalence survey by providing technical assistance in the study protocol development and budget. The study protocol received final approval from the national bio ethics committee and Global Fund has approved the study budget.

Key results:

CTB supported 9 provincial quarterly meetings across its 4 provinces. During the meeting, all district supervisors brought their TB registers to validate data with NTP and to discuss each provinces contributions to the CB-DOTS key indicators reported by NTP. During meetings, additional coaching and mentoring assistance focused on accurate completion of TB register forms helped to ensure quality data was gathered and reported. These meetings have improved reporting by NTP district supervisors. Reports are now compiled with more accuracy and completeness. A quick review of reporting requirements based on the new WHO approved instruments rolled out, and in-use, from the beginning of the year showed that the new tools are being used correctly, though data entry is still a challenge in some districts. The CTB M&E officer provided practical support in the compilation and analysis of data as well as validation to guarantee that data from CTB-supported provinces is accurate.

CTB provided technical assistance to NTP at the provincial level to improve data accuracy and quality of the provincial summary reports sent to central NTP. This was done by creating data validation formula checks within the Excel summary forms. This validation check has helped eliminate inconsistent and inaccurate data that is reported to NTP centrally.

The M&E revised data collection instruments, which CTB previously supported the revision, printing and training for, are currently in use country wide. The electronic version development has been

delayed. However, the MDR TB electronic register, (an excel based provincial register matching with the MDR TB facility register) is currently in use for case management and treatment follow-up.

Table 13: Sub-objective 10. Quality data, surveillance and M&E

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target	Result
				Y2	Y
10.1.4	Status of electronic recording and reporting system	<p>Description: This indicator measures the status of electronic recording and reporting (ERR) Indicator value: Score based on below: 0=R&R system is entirely paper-based; 1=electronic reporting to national level, but not patient/case-based or real time; 2= patient/case-based ERR system implemented in pilot or select sites (TB or MDR-TB); 3=a patient/case-based, real-time ERR system functions at national and subnational levels for both TB and MDR-TB; 4= a patient/case-based, real-time ERR system is functional at national and subnational levels for both TB and MDR-TB completely and meets WHO standard for TB surveillance data quality - i.e., data in the national database are accurate, complete, internally consistent, within timelines set, validated and free of duplicates and a data quality audit system is put in place (source: Standards and Benchmarks for Tuberculosis Surveillance and Vital Registration Systems – Checklist and User Guide, WHO, 2014). Level: National</p>	0	2	2 (MDR-TB only)
10.2.1	Standards and benchmarks to certify surveillance systems and vital registration for direct measurement of TB burden have	<p>Description: National TB surveillance system is certified based on WHO standards and benchmarks for TB surveillance and vital registration systems (for paper-based or electronic systems). For a country's TB surveillance systems to be</p>	0	N/A	No

	been implemented	certified as providing a direct measurement of TB cases and TB deaths, all 10 standards and their associated benchmarks (Part B, Section 1) should be met (source: Standards and Benchmarks for Tuberculosis Surveillance and Vital Registration Systems – Checklist and User Guide, WHO, 2014). The country standards and benchmarks score will be monitored as a sub-indicator to track progress. Indicator Value: Yes/No Level: National"			
10.2.6	Percent % of operations research project funding provided to local partner (provide % for each OR project)	Description: This indicator measures the proportion of Challenge TB-supported operations research project funding provided to local partner(s), by each OR project. Indicator Value: Percent Level: Challenge TB geographic areas Numerator: Amount of operations research project funding provided to local partner by Challenge TB during a year Denominator: Total Challenge TB operations research budget during the year of assessment.	0%	1% (80.000/5, 404,310)	0% (CTB did not carry out operational research during this reporting Period).
10.2.7	Operational research findings are used to change policy or practices (ex, change guidelines or implementation approach)	Description: For all Challenge TB-supported operation research projects implemented in a country, results of these projects are used to change policy or practices (ex. change guidelines or implementation approach). Relevant data are collected/ presented for each individual project by special report with qualitative details. Indicator Value: Yes/No Level: National"	0	Yes	No (CTB did not carry out operational research during this reporting period)

Sub-objective 11. Human resource development

Capacity building of human resources is a central tenant of strengthening government health systems for sustainability of quality TB services. As such CTB staff and partners lead and participate in

numerous trainings throughout the year. The high quality of such training has been recognized. One example demonstrating this was the increase in MDR knowledge scores in Sofala province clinicians from only 20% (20/32) during pre-testing to 94% (30/32) following CTB supported MDR-TB training. Supportive supervisory visits show that trained clinicians are using their newly acquired skills for better patient management. As an example, trained clinicians are more often referring patients from high risk groups (i.e. retreatment cases, PLHIV and children) for GeneXpert investigations. In addition, facilities which received CTB-supported training show an increase in the number of clinicians requesting regular smear test for clinical control development of the patients.

Key Results

The project successfully trained 3,169 (M 1,894, F 1,275) MCHN, clinicians and CHW in APA2.

Table 14: Sub-objective 11. Human resource development

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target	Result
				Y2	Y
11.1.3	Number of healthcare workers trained, by gender and technical area	Description: This indicator measures the number of healthcare workers (which includes health facility staff, community health volunteers, laboratory staff, sputum transport technicians, community-based DOTS workers) trained, by gender and sub-objective. Training includes any in-person, virtual, or on-the-job training that is longer than half a day and for which curriculum is available. This indicator is interchangeable with 'Number of individuals trained in any component of the WHO Stop/End TB Strategy with USG funding' which USAID missions may have as a requirement for internal agency reporting. Indicator Value: Number Level: National and Challenge TB geographic areas Numerator: Number of HCWs trained during the reporting period		3,964	3,169 (M 1,894, F1,275)
11.1.5	Percent of USAID TB funding directed to local partners	Description: This indicator measures the proportion of CTB annual funding directed to local partners Indicator Value: Percent Level: National. Although CTB may be working with local partners in specific geographic areas, the overall total going to local partners			13% (741,313/ 5,763,715)

		<p>at any level should be included in the numerator and compared to the overall country budget.</p> <p>Numerator: Amount of CTB country project funding directed to local partners during the most recent fiscal year</p> <p>Denominator: Total CTB country project budget during the most recent fiscal year.</p>			
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4. Challenge TB Support to Global Fund Implementation

Table 15: Current Global Fund TB Grants

Name of grant & principal recipient (i.e., Tuberculosis NFM - MoH)	Average Rating*	Current Rating	Total Approved/Signed Amount**	Total Committed Amount	Total Disbursed to Date
MOZ-C-FDC	B1 Adequate	C	\$22,026,026	\$6,212,824	\$4,537,467
MOA-T-MOH		B2	\$40,618,490	\$ 23,634,831	\$6,843,443

* Since January 2011

** Current NFM grant not cumulative amount; this information can be found on GF website or ask in country if possible.

In-country Global Fund status - key updates, current conditions, challenges and bottlenecks

Mozambique is currently implementing the New Funding Model (NFM) joint TB/HIV grant with grant end date of December 2017 and a total amount of US\$ 62.6 million. The GF grants focuses on TB care and prevention activities (infection control measures, case detection and diagnosis interventions), procurement of new diagnostic technologies (LED microscopy and GeneXpert); procurement of drugs, laboratory reagents and consumables; and strengthening of the health information system and monitoring and evaluation (DHIS-2 database and prevalence survey). The biggest challenge has been with the country coordination mechanism, which is supposed to allocate funds to the different MOH departments. This allocation takes longer than expected, which affects activity implementation especially at district and community level and expenditure reconciliation which negatively impacts on country ratings. The funding release process between the central bank and the Ministry of Health via the Ministry of Finance takes up to eight months, during which time the NTP cannot access the funds. The GF rating on performance is only B2. The drastic currency devaluation had huge implications on the GF burn rate and which could affect the next GF funding mechanism.

Challenge TB involvement in GF support/implementation and any actions taken during Year 2

CTB continued to support the NTP in GF activity implementation through provision of technical assistance in planning and implementation of activities. CTB staff were actively involved in GF funded trainings and supportive supervision visits.

The TB Prevalence survey is supported by both the GF and CTB. TA was provided by external KNCV consultants, as well as by the CTB team in Mozambique. The survey protocol was approved by the national bioethics committee after responses to the questions raised by the Committee were addressed and the protocol resubmitted. The data management plan was finalized with TA from KNCV. The procurement list was finalized and items are now being sourced and purchased. The pilot of the prevalence survey is expected to take place in March 2017. The prevalence study (PS) budget has now been approved, which required a significant level of commitment from CTB, including attending various meetings with partners, NTP and GF. The CTB M&E Officer provided support throughout the process.

The NTP is still in process of recruiting the PS coordinator, a key position for the successful implementation of the survey. Identification of competent personnel has been a challenge and has delayed implementation of planned activities. CTB will continue to monitor the situation and discuss viable options with other technical partners who are supporting the PS preparation and how to maintain the planned timeline.

CTB also provided support for the orientation to and finalization of the GF community engagement plan to the GF civil society principal recipient (Fundação para Desenvolvimento da Comunidade - FDC) who will pilot community activities.

Coordination between CTB and NTP regarding GF activities has improved significantly in the course of this year with increased engagement at the National level.

5. Challenge TB Success Story

Mozambique - Childhood TB

Tuberculosis is one of the leading causes of death in children and infants worldwide and it is estimated that up to 136,000 children die of TB each year with a million infected, but as childhood TB is hard to diagnose the numbers are probably even higher. The urgency of the problem cannot be underestimated given that the risk of developing severe, often fatal or lifelong forms of TB is high. Although it is a priority, most national programs, including Mozambique, have not given adequate attention to this.



Challenge TB supported the training of 137 maternal and child nurses in screening, diagnosis and case management in Tete Province. The district supervisor of Angonia District, Maria Isabel Deversone, participated in the training, she has been practicing as a nurse for the past 15 years and before the training, she found the diagnosis of pediatric TB cases hard.

Since the training she has supported the district staff in the diagnosis of 93 children with TB, a dramatic improvement from the first six months of 2015 when only

ten were diagnosed. All the children who were diagnosed have been started on treatment and the good news is, that once diagnosed, it is easy to cure.

The training helped the district find more child TB cases in the first five months than were detected in the past three years combined.

Challenge TB is working hard to guarantee that drug supply will be sufficient to respond to the increased numbers of children being diagnosed and will continue support by providing on-the-job training and to expanding to the peripheral health facilities.

Photo: A mother with her baby during a consultation visit with a pediatrician. The consultation includes TB screening.

6. Operations Research

Title of OR study	Local partners involved in study	Implementation Status	Key findings	Dissemination
		CTB did not carry out OR in APA2		

7. Key Challenges during Implementation and Actions to Overcome Them

Challenge	Actions to overcome challenges
Technical	
Competing priorities within NTP have led to a delay in implementation of some planned activities, including integrated NTP/CTB supportive supervision visits. In APA 2, NTP prioritized the introduction of the new M&E tools (finalization, reproduction, distribution and or training of staff on revised data collection instruments).	CTB carried out supervisory visits to 16 health facilities without the NTP. All supervisory reports were then shared with NTP.
Administrative	
Due to delays in approval of sub awards with local partners, the implementation of Community Based Directly Observed Treatment (CB DOTS) activities could not start according to plan.	As a way to overcome this, CTB strengthened its presence in the provinces by intensifying implementation of activities not directly linked to CB DOTS and increased technical support at health facility level. For example, the CTB Provincial Technical Officer (PTO) provided more technical and direct support to the NTP in the implementation of care and prevention activities for patients with susceptible TB, MDR-TB, Infection Control (IC) and Pediatric TB, and provision of technical support in high burden TB/HIV facilities through additional clinical examination on potentially missed cases by health technicians.
Continued devaluation of the local currency against the US dollar remains a substantial challenge. While the US\$ was pegged at 35 Mozambican meticaïs during budget development, it is now trading at an average of 76.5 to the US\$. This translates to a working budget in local currency that is more than double the predicted amount. This has huge implications for the burn rate and might lead to low country buying for Year 3.	The project is in the process of identifying potential savings and developing a MOT to use the identified funds for other activities, which had been initially under-budgeted or reduced during the planning and budgeting process.
Continued political-military tension in the country is limiting activity implementation, especially for activities targeting districts distant from the provincial capitals in all CTB provinces. CTB (FHI 360 policy) limits travel to ensure the safety of staff. This affects most road travel between CTB provinces and within its districts by civilian vehicles.	<p>Activities affected include supportive supervision and mentoring visits and technical assistance to both NTP and CB DOTS partners. The CTB team, including Provincial leaders, are considering ways to mitigate this problem including having the people from the districts travel to the capital cities to present data. They can more safely travel than "official" cars. CTB has increased distance based supervision by using mobile phones and social media as WhatsApp and SMSs.</p> <p>CTB has created an access map that shows the percentage of health facilities that have become off limits due to the conflict. This map is updated on a quarterly basis.</p> <p>There is hope that a recently created group of mediators (composed of Government, RENAMO and international observers) will broker a peace deal between RENAMO and the Government in the near future</p>

8. Lessons Learnt/ Next Steps

The project has taken a proactive approach by analyzing and critiquing the current CTB strategy and its likelihood of successfully meeting targets. During the work plan development workshop, with the participation of the NTP central level led by the NTP manager, NTP and MOH provincial representatives, USAID Washington Mozambique backstop, USAID Mission AOTR, FHI 360 HQ CTB representative and CTB Mozambique staff, all participants agreed on the need to change the current model and strategy, and unanimously endorsed the move toward a more province-based approach. The shifting of the project focus from central to provincial level will require greater CTB staff time in the provinces and increase the number of project staff in the provinces in strategic areas (clinical, laboratory, and M&E). The decision to focus more on the provincial level means project staff must be reinforced to strengthen project staff to provide the much needed technical support and assistance to the NTP. Thus, in year 3 CTB will recruit 9 new staff (5 clinical officers, 3 M&Es and 2 Lab officers to provide long term technical assistance and increased opportunities for mentoring and coaching in TB management (clinical), diagnosis (regional laboratories) and quality data collection to monitor key outcomes and determine trends.

Central level support will however continue with the projects senior technical officers (STOs) to provide greater support to the NTP at central level by providing technical leadership and input in important technical areas including MDR-TB, Pediatric TB, Laboratory, Advocacy Communication and Social Mobilizations (ACSM), prisons, M&E, and infection control. The support will include mentoring and technical assistance in the development of manuals (Prison TB, Laboratory and PMDT). Technical assistance will continue to support policy and guideline development and revisions. The project will also continue to support the first national TB Prevalence Survey and activities targeting risk groups. Central support is important especially in coordinating and leading various technical working groups as demonstrated by the project's leadership in prison TB interventions. This will continue and will position the project as a lead in the country.

In addition to the change in focus and shift in levels of support to be provided, the project will implement an adapted CB-DOTS model beginning in year three with the aim to improve project results. Contributions of CB-DOTS to overall NTP indicators, especially case detection, has room for improvement and there is need to demonstrate the added advantage of the strategy. The project completed a provincial epidemiological data analysis looking at data in each target district and how the variable/indicators were performing. The analysis helped the project to reflect on approaches currently being used and how these were contributing to results. CTB has learned from the results that there is need to develop a different well-articulated approach when planning APA 3, resulting in the adoption of strategies to be guided by district epidemiology data. This should produce more yields on investment to be done compared to previous years. CTB will also implement innovative approaches (e.g., contact investigation, integrated TB/HIV community care) tailored to specific district epidemiological situations. These models will also build the capacity of local organizations in active case finding that targets key populations in both urban and rural settings prioritizing the highest HIV prevalence settings.

The planned activities for APA3 will align with NTP priorities as defined by the TB National Strategic Plan (NSP) 2014 – 2018, and will complement TB/HIV activities implemented by PEPFAR funded partners as well as fill gaps identified in the implementation of activities funded by the GF to increase TB case notification (all forms and MDR-TB) and improve treatment outcomes, especially for MDR-TB. CTB will apply innovative strategies and new tools to support efforts to prevent the further spread of susceptible and drug-resistant TB, such as expansion of Xpert testing/GXAlert, DST/LPA and new drugs and regimens.

To maximize yields from project interventions, CTB will strengthen case-finding strategies within health facilities (ICF/ECF) aimed at PLHIV, children under five attending MCH clinics, prisoners' entry screening, as well as outside health facilities (ACF) in communities aimed at mining communities, and contact investigation. The project will pilot and introduce screening strategies for HCWs, strengthen community based case-finding through contact investigation, HF based ECF (FAST, prison interventions) and ICF approaches among PLHIV in the project provinces by modifying/adapting the

current CB-DOTS model and including a clinical component to the project, prioritizing activities based on the epidemiological and programmatic situation in each district. The project will strengthen community engagement and interventions by CB-DOTS partners, with the idea of leveraging resources and providing a holistic approach to service provision for project beneficiaries.

CTB has over the course of the year, established a good working relationship with the NTP at all levels. The NTP manager and MDR-TB focal point person participated fully at the CTB work plan development meeting held at the central level. The APA 3 work plan is aligned to NTP National Strategic Plan (NSP) (2014 to 2018). CTB will continue to involve the NTP in the implementation and monitoring of activities. In line with this, the CTB M&E officer will sit at the NTP once every month for one week, to assist with data validation and reporting, thus, also ensuring that NTP data is available to CTB for the purpose of project reporting. The M&E support will also continue at the provincial level with the project supporting the NTP quarterly data evaluation meetings. These meetings are an avenue for the project to assist NTP in data quality, through data validation. Lessons learnt is, by cross analyzing data and presenting the results to NTP districts supervisors, this has improved their understanding on the use of data and better appreciation on need for quality data.

The implementation of project activities in APA 2 came with numerous challenges, especially the delay in the start-up of CB-DOTS activities in CTB provinces. The process took around 6 months to be completed and this was due to translations of documents (Portuguese to English for all partner scope of work/project descriptions) to facilitate the external review process and the revisions which were meant to align project descriptions to the desired quality. As a lesson learnt, in year 3, CTB decided to take a different approach in sub award scope of work development, and this involved convening all different stakeholders involved in the process (partners, FHI CO & HQ staff and PMU-KNVC) together for a joint planning and writing exercise. During the 5-day partners meeting, specific strategies and approach to be used was given and partners were oriented on the way to develop their scope of work including budgeting. This will reduce review time and expedite work plan approval.

Annex I: Year 2 Results on Mandatory Indicators as well as National Data on the Number of pre-/XDR-TB Cases Started on Bedaquiline or Delamanid

Estimates of TB/MDR-TB Burden, 2015			
<i>Data for the following indicators will be collected from the WHO Global TB Report 2016</i>			
1. Mortality (excludes HIV+TB)	Number (thousands)	Rate (per 100,000 pop.)	Notes
2. Mortality (HIV+TB only)	Getting from WHO	Getting from WHO	
3. Incidence (includes HIV+TB)	Getting from WHO	Getting from WHO	
4. Incidence (HIV+TB only)	Getting from WHO	Getting from WHO	
5. Incidence (MDR/RR-TB)	Getting from WHO	Getting from WHO	
6. Case detection, all forms (%)	Getting from WHO	Getting from WHO	Estimated incidence of MDR/RR-TB will be reported in the WHO Global TB Report 2016 onward
	Getting from WHO	Getting from WHO	
7. Estimated % of TB cases with MDR-TB	New	Retreatment	
8. Estimated MDR-TB cases among notified pulmonary TB cases	Getting from WHO	Getting from WHO	
	Getting from WHO	Getting from WHO	
9. HIV-positive TB patients on antiretroviral therapy (ART)	Number	Percent	
	Getting from WHO	Getting from WHO	
MANDATORY Indicators			

<i>Please provide data for the following mandatory indicators:</i>				
2.1.2 A current national TB laboratory operational plan exists and is used to prioritize, plan and implement interventions.	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments
Score as of September 30, 2016	0	0	Moderate	Due to competing priorities at the MOH, consultant is yet to be identified to lead the development of the National Lab Strategy
2.2.6 Number and percent of TB reference laboratories (national and intermediate) within the country implementing a TB-specific quality improvement program i.e. Laboratory Quality Management System	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments
Number and percent as of September 30, 2016	33% (1/3) Maputo NRL - Accredited Nampula RL- 0 star Beira RL - 0 Star	N/A	Moderate	Beira and Nampula reference labs are also implementing and following a step-wise plan for a TB laboratory quality management system towards accreditation. Nampula 1 star Beira 1 star CTB continued to support these regional labs through long term TA provided by Maputo NRL technicians and supervisory visits
2.2.7 Number of GLI-approved TB microscopy network standards met	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments

Number of standards met as of September 30, 2016	4	N/A	Moderate	4 GLI-approved Standards met (3, 6, 7, & 11)
2.3.1 Percent of bacteriologically confirmed TB cases who are tested for drug resistance with a recorded result.	National 2015	CTB 2015	CTB APA 2 investment	Additional Information/Comments
Percent (new cases) , include numerator/denominator	U	U	Limited	National data is not available as the NTP is still compiling the data. In APA 3, this data will be easily available due to the revised NTP tools and registers currently in use in APA 2. CTB data in 2015 not disaggregated by new or retreatment.
Percent (previously treated cases) , include numerator/denominator	U	U		
Percent (total cases) , include numerator/denominator	U	U/13,075		
3.1.1. Number and percent of cases notified by setting (i.e. private sector, pharmacies, prisons, etc.) and/or population (i.e. gender, children, miners, urban slums, etc.) and/or case finding approach	National APA2	CTB APA2	CTB APA 2 investment	Additional Information/Comments
Number and percent	<i>Fill in data in "Ind 3.1.1 - APA 2" worksheet</i>	<i>Fill in data in "Ind 3.1.1 - APA 2" worksheet</i>	Substantial	
3.1.4. Number of RR-TB or MDR-TB cases notified	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments
Total 2015	644	98	Moderate	
Jan-Mar 2016	150	52		
Apr-June 2016	172	56		
Jul-Sept 2016	U	U		
To date in 2016	322	108		

3.2.1. Number and percent of TB cases successfully treated (all forms) by setting (i.e. private sector, pharmacies, prisons, etc.) and/or by population (i.e. gender, children, miners, urban slums, etc.).	National 2014 cohort	CTB 2014 cohort	CTB APA 2 investment	Additional Information/Comments
Number and percent of TB cases successfully treated in a calendar year cohort	Getting from WHO	90% (12,221/13,590)	Moderate	CTB Area data only Disaggregated data not available
3.2.4. Number of patients started on MDR-TB treatment	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments
Total 2015	664	98	Moderate	The NTP is still compiling the data.
Jan-Mar 2016	146	49		
Apr-June 2016	168	53		
Jul-Sept 2016	U	U		
To date in 2016	978	200		
3.2.7. Number and percent of MDR-TB cases successfully treated	National 2013 cohort	CTB 2013 cohort	CTB APA 2 investment	Additional Information/Comments
Number and percent of MDR-TB cases successfully treated in a calendar year cohort	Getting from WHO	52% (26/50)	Moderate	
5.2.3. Number and % of health care workers diagnosed with TB during reporting period	National 2015	CTB 2015	CTB APA 2 investment	Additional Information/Comments
Number and percent reported annually	U	3% (44/1580)	Limited	Data will be updated as soon as NTP finalizes the compilation of data
6.1.11. Number of children under the age of 5 years who initiate IPT	National 2015	CTB 2015	CTB APA 2 investment	Additional Information/Comments
Number reported annually	U	5.228	Moderate	Data will be updated as soon as NTP finalizes the compilation of data
7.2.3. % of activity budget covered by private sector cost share, by specific activity	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments

Percent as of September 30, 2016 (include numerator/denominator)	N/A	N/A	None	
8.1.3. Status of National Stop TB Partnerships	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments
Score as of September 30, 2016	1	N/A	None	
8.1.4. % of local partners' operating budget covered by diverse non-USG funding sources	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments
Percent as of September 30, 2016 (include numerator/denominator)	N/A	0%		
8.2.1. Global Fund grant rating	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments
Score as of September 30, 2016	B1	N/A	Limited	CTB supported the implementation of GF activities through technical assistance provided to NTP during the revision and finalization of tools and registers, printing, training of NTP provincial and districts supervisors and the role out of the tools in CTB provinces. CTB/KNCV is supporting the NTP in TB Prevalence Study (PS) through Technical assistance in protocol development, data management plan and SOPs. The PS will be implemented in APA 3 CTB will support development of upcoming concept note for GF in APA3.
9.1.1. Number of stock outs of anti-TB drugs, by type (first and second line) and level (ex, national, provincial, district)	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments

Number as of September 30, 2016	0	0	None	Although the country does not report national level stock-outs, there are distribution issues resulting in lack of second-line drugs and pediatric FDCs in peripheral health facilities. CTB does not invest in this area, but realizes that more support is needed and will become more involved in APA3.
10.1.4. Status of electronic recording and reporting system	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments
Score as of September 30, 2016	2	N/A	Moderate	2 (patient/case-based ERR system implemented at provincial level (MDR-TB only))
10.2.1. Standards and benchmarks to certify surveillance systems and vital registration for direct measurement of TB burden have been implemented	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments
Yes or No as of September 30, 2016	Yes	N/A	None	MEASURE Evaluation conducted a tuberculosis (TB) assessment as part of a broader EPI assessment in 2014. A new standards and benchmarks assessment is needed and CTB will be following up to determine whether this is being considered by WHO at this time.
10.2.6. % of operations research project funding provided to local partner (provide % for each OR project)	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments
Percent as of September 30, 2016 (include numerator/denominator)	N/A	0% (0/80,000)	None	CTB did not carry out operational research during this reporting period.

10.2.7. Operational research findings are used to change policy or practices (ex, change guidelines or implementation approach)	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments
Yes or No as of September 30, 2016	N/A	No	None	CTB did not carry out operational research during this reporting period.
11.1.3. Number of health care workers trained, by gender and technical area	CTB APA 2		CTB APA 2 investment	Additional Information/Comments
			None	
	# trained males APA 2	# trained females APA 2	Total # trained in APA 2	Total # planned trainees in APA 2
1. Enabling environment	0	0	0	
2. Comprehensive, high quality diagnostics	184	173	357	
3. Patient-centered care and treatment	920	526	1446	
4. Targeted screening for active TB	61	114	175	
5. Infection control	196	44	240	
6. Management of latent TB infection	0	0	0	
7. Political commitment and leadership	0	0	0	
8. Comprehensive partnerships and informed community involvement	0	0	0	
9. Drug and commodity management systems	0	0	0	
10. Quality data, surveillance and M&E	0	0	0	
11. Human resource development	118	45	163	

12. MDR-TB	131	61	192	
TB Pediatric	284	312	596	
Grand Total	1894	1275	3169	0
11.1.5. % of USAID TB funding directed to local partners	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments
Percent as of September 30, 2016 (include numerator/denominator)	N/A	58% (741,313/1,277,897)	Substantial	CTB had 8 local partners in 4 provinces.

Year/Quarter	Number of pre-/XDR-TB cases started on BDQ nationwide	Number of pre-/XDR-TB cases started on DLM nationwide	CTB APA 2 investment	Additional Information/Comments
Total 2014	0	0	Limited	7 XDR patients will start BDQ and DLM treatment in Q1 APA 3. CTB supported preliminary preparatory efforts for the introduction of new drugs and regimens in country by actively participating technical working group for ND&R and training of clinicians on new drugs at the provincial. Although actual new drugs are only currently available through MSF clinics in Maputo.
Total 2015	0	0		
Jan-Mar 2016	0	0		
Apr-Jun 2016	0	0		
Jul-Aug 2016	0	0		
To date in 2016	0	0		

Annex II: Status of EMMP activities

Year 2 Mitigation Measures	Status of Mitigation Measures	Outstanding issues to address in Year 3	Additional Remarks
For health facilities being supported by CTB, the project will obtain the approval of the National Institute of Health (INS) and NTP on the developed specimen transportation guidelines to be used in training CTB staff and community based volunteers. CTB will support in the training of people to be involved, especially motorbike riders and community health volunteers. Motorbikes to be purchased will be installed with a transport container for bio-safety measures. Training guideline will align with the International regulations from WHO using triple package system.	<p>Training was provided to HF level MOH staff, CB-DOTS implementing agencies staff and motorbike riders who were involved in STS. The training was conducted using a developed STS guidelines which takes into consideration bio safety measures. The purchased motorbikes were installed with a transportation box and the triple packaging system for STS as approved by WHO is in use.</p> <p>A spill kit was developed and contains; instructions on how to respond in a sputum spill situation, gloves, respirators (N95), specific forms to register the incident and absorbent materials.</p>	Procure more individual protection equipment (N95 respirators, gloves) and strengthen the triple packaging system with more durable system	
During CTB/NTP supportive supervision visits, bio-safety measures will be discussed and checked; when necessary corrections will be made	On-the-job training and mentoring was provided during supportive supervision visits on bio safety	Continue with supportive supervision visits	
CTB will review any minor renovation plans prior to implementation to ensure compliance with environmentally sound rehabilitation practices as laid out in the <i>Small Scale Construction chapter of the USAID Environmental Guidelines for Small-Scale Activities in Africa</i> . For example, no lead paint will be used and excess materials will be recycled or	Measures were taken into consideration with renovations plans approved by the provincial directorate of infrastructure in close coordination with provincial lab and NTP supervisor.	Final renovation report to be produced and will contain information if all environmental requirements have been met including existence of HF incinerators.	

disposed of in an environmentally sound manner. For any TB laboratories, health-related TB infection control measures should be adopted.			
The Provincial Level Infrastructure personnel, staff from the hired construction company and CTB staff will conduct regular site inspections to ensure the public health standards are met and in line with national policy/regulations and ensure the minimum environmental requirements are met. Should the contractor deliberately violate any of the minimum requirements, CTB will terminate the contract	Regular site inspection conducted and reports compiled. The reports contained recommendations on environmental requirements were necessary.		